U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Radiation - Standard Precision, Inc. (Former) - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VII

Subject: POLREP #1
Initial
Radiation - Standard Precision, Inc. (Former)

Wichita, KS
Latitude: 37.6507800 Longitude: -97.3921000

To: Mary Peterson, EPA Region 7
Scott Hayes, EPA Region 7

From: Megan Schuette, OSC
Date: 8/7/2012
Reporting Period: 7/26/2012-8/7/2012

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1. Introduction

1.1 Background

Site Number:	A7N3	Contract Number:	
D.O. Number:		Action Memo Date:	6/15/2012
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	00
Mobilization Date:	7/26/2012	Start Date:	7/26/2012
Demob Date:		Completion Date:	
CERCLIS ID:	KS0000900316	RCRIS ID:	N/A
ERNS No.:		State Notification:	Referred by KDHE
FPN#:	N/A	Reimbursable Account #:	N/A

1.1.1 Incident Category

This is a time-critical, fund-lead removal action to address radium-226 contamination at the Radiation - Standard Precision, Inc. (Former) site (Site).

1.1.2 Site Description

The KDHE Bureau of Air and Radiation (BAR) licensed radium dial shops. According to BAR records, Standard Precision, Inc. operated a facility repairing aircraft instruments in the 1960s and 1970s. The facility received a Kansas Radioactive Materials License with KDHE's BAR in 1966. The license was terminated in 1973.

Radium in luminescent paints was widely used for aircraft dials, gauges and other instruments. Radium dial repair shops were located in Wichita to upgrade and repair radium-bearing aircraft instruments. During this process, paint containing radium was stripped from the dials with solvent prior to the dials being repaired.

The Site is currently occupied by a large manufacturing building and a smaller building with footprints of approximately 32,800 and 5,000 square feet, respectively. The Site is currently used for metal fabrication and as a warehouse. The area surrounding the Site is primarily commercial/industrial.

1.1.2.1 Location

The Site is located at 4105-4129 West Pawnee Street, Wichita, in the northeast quarter of Section 2, Township 28 South, Range 1 West, in east central Sedgwick County, Kansas. The approximate center of the Site is at the following coordinates: 37.65078 degrees north latitude and 97.39210 degrees west latitude. The Site is part of a four-acre commercial property. Residences are located within 1,320 feet of the Site.

1.1.2.2 Description of Threat

The primary contaminant of concern at this Site is radium-226. The EPA and the KDHE have documented radium-226 concentrations in soil exceeding 5 pCi/g plus background (up to 5,680 pCi/g).

Radioluminescent paint - a mixture of a radionuclide, usually radium-226, and a phosphor, usually zinc sulfide - was developed in the early 1900s. The mixture was initially used on watch and clock faces and later adapted for use on instruments, most notably aircraft dials. As radium decays, it emits an alpha particle that can excite the phosphor, which eventually releases a photon. The end results are dials that "glow" and can be read at night without light.

Radium has 25 known isotopes, four of which occur in nature, with radium-226, and to a lesser extent, radium-228 being most common. Radium-226 has the longest half-life at 1,602 years. Radium is a decay product of uranium, and consequently, is associated with uranium ores. Radium decays by emitting alpha and beta particles and gamma rays. Radium initially decays into radon, a heavy gas, which itself decays into other radioactive solids, including polonium, bismuth, lead and thallium. Radium in soils does not biodegrade.

The past and current workers at the Site or passersby may have been and/or are being exposed via inhalation of or dermal contact with the radium-contaminated material, which is present at numerous areas at or near the surface. It also appears that the radium-contaminated material at the property is a source area for contamination of the area groundwater.

Exposure to high levels of radium results in an increased incidence of bone, liver and breast cancer. Radium, like calcium, is retained in bone tissue; bone cancer is the greatest risk from radium exposure. Death and decreased longevity have been reported as a result of long-term exposure. Radium has also been shown to affect the blood (anemia), eyes (cataracts) and teeth (increased broken teeth and cavities). Emitted ionizing radiation from the decay of radium and its daughters can lead to skin damage, hair loss, birth defects, general illness and cancer.

Radium-226 is a hazardous substance, as defined by section 101(14) of the CERCLA and is listed at 40 CFR § 302.4 as radionuclides.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

KDHE conducted field work in November 2006 and February 2007 to support a Unified Focus Assessment (UFA) issued in March 2007. Twelve groundwater samples and 18 soil samples were collected for the UFA. Samples were analyzed for radium-226; the 8 RCRA metals (lead, arsenic, barium, cadmium, chromium, mercury, selenium and silver) and volatile organic compounds. The UFA identified several areas that had elevated radium concentrations exceeding the standard established in the CFR at 40 CFR § 192.12 for a cleanup level not to exceed background plus 5 pCi/g (up to 5,680 pCi/g of radium-226).

The EPA conducted field activities for a removal site evaluation (RSE) in March 2009. Field screening with radiation detectors and radiation analysis of soil samples further defined the vertical and aerial extent of contamination.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Soil contaminated with radium-226 above the 6.4 pCi/g action level will be removed and transported to EnergySolutions' disposal facility in Clive, Utah. The excavated soils will be replaced with clean soils. Clean soils are soils that have been analyzed for radium, with results indicating that the concentration is at or below the background and that all other hazardous substances, pollutants or contaminants are below residential soil screening levels as determined by the EPA, or as referenced in the Region 9 Preliminary Remediation Goal tables found at http://www.epa.gov/region9/superfund/prg/, or as outlined in the KDHE RSK Manual, Version 5, 2010. The soils at the Site will be backfilled with soil and revegetated or reconcreted at the owner's discretion.

Field screening and monitoring with handheld instruments will be utilized to determine if radium-contamination has been removed. Samples will be sent to the lab to verify that the radium-contaminated materials were removed.

The excavated material will be transported and disposed of at a licensed facility in accordance with all applicable local, state and federal requirements.

At this time, no post removal Site control will be necessary.

2.1.2 Response Actions to Date

The ERRS contractor mobilized to the Site on July 26, 2012. Radium-contaminated soils were excavated and replaced with clean soils. An old concrete tank (suspected of holding radium-contaminated material) and its accompanying piping was removed. An area of concrete floor inside the building at 4105 West Pawnee near the loading docks was cut out, and soil and concrete removed. All radium-contaminated materials were transported to the Radiation - Standard Products site for temporary storage until being loaded into railcars for transportation and disposal.

A timeline of events to date is as follows:

July 26, 2012 - Concrete areas to be removed were marked and cutting of concrete began.

July 27, 2012 - Cutting and breaking of concrete outside was conducted. Cutting of concrete inside building was conducted and breaking of the concrete began.

July 28, 2012 - No activity at Site - all ERRS at Radiation - Standard Products site.

July 29, 2012 - No activity at Site - all ERRS at Radiation - Standard Products site.

July 30, 2012 - The EPA and START surveyed the drainage area north of Southwest Boulevard as requested by the City of Wichita. Concrete inside and outside the doorway was cut and broken. Soil and additional concrete was removed from the interior area. Area will be filled with concrete.

July 31, 2012 - A safety audit was conducted at the Site by the EPA Region 7's Safety Officer, Roy Krueger. The concrete tank was excavated. Kyle Parker, geologist with KDHE, visited the site. Tank appeared to have leaked at some point as there was radium-contamination around and below the tank. Excavation was approximately 12 feet deep and there was still radium-contaminated soil at that depth. The decision was made to leave this soil in place as excavating any deeper posed a safety hazard. After backfilling and resurfacing with concrete, there will not be exposure concern at the surface.

August 1, 2012 - Additional concrete was cut and removed around the excavated tank area due to elevated levels of radium to the east and west. Areas 5 and 6 were excavated.

August 2, 2012 - Orange fencing was placed at the bottom of the tank area hole as a warning to anyone who might dig in that area in the future and the tank area was backfilled. Additional concrete was cut and broken around the piping area. Areas 5 and 6 were backfilled.

August 3, 2012 - Corena Carpenter (Project Manager for KDHE) visited the Site. Areas 3 and 4 were excavated. Piping (Area 2) was removed and soils around piping were excavated. Area 1 was excavated.

August 4, 2012 - Backfilling was completed and the site was prepared for concrete and sodding.

August 5, 2012 - No activity at the Site.

August 6, 2012 - Site prep work was continued concrete and sodding. Interior area was filled with concrete.

August 7, 2012 - Concrete was poured at the Site.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

To date, no PRPs have been identified.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*
N/A					

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Radium-contaminated materials from the Site that are being temporarily stored at the Radiation - Standard Products site will be loaded onto railcars and transported to the disposal facility.

2.2.1.2 Next Steps

Complete site restoration.
Transportation and disposal of waste.

2.2.2 Issues

None at this time.

2.3 Logistics Section

Logistical issues include the coordination between ERRS, the disposal facility, the railroad and any additional necessary parties for transportation and disposal of radium-contaminated waste.

2.4 Finance Section

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
ERRS - Cleanup Contractor	$187,900.00	$30,000.00	$157,900.00	84.03%
START	$16,000.00	$4,000.00	$12,000.00	75.00%
Intramural Costs				
USEPA - Direct	$20,000.00	$5,000.00	$15,000.00	75.00%
Total Site Costs	$223,900.00	$39,000.00	$184,900.00	82.58%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

2.5 Other Command Staff

2.5.1 Safety Officer

All removal work is being conducted in accordance with the approved Site Safety Plan and under the guidance of the EPA Region 7 Radiation Safety Officer, Chuck Hooper. A site visit was conducted by the EPA Region 7 Safety Officer on July 31, 2012.

2.5.2 Liaison Officer

Beckie Himes, Community Involvement Coordinator with the EPA Region 7 - Office of Public Affairs, will serve as the Liaison Officer.

2.5.3 Information Officer

Beckie Himes, Community Involvement Coordinator with the EPA Region 7 - Office of Public Affairs, will serve as the Information Officer.

3. Participating Entities

3.1 Unified Command

The limited scope of response does not warrant a full Incident Management Team or Unified Command.

3.2 Cooperating Agencies

Kansas Department of Health and Environment
City of Wichita - Office of Environmental Health

4. Personnel On Site

1 - EPA OSC
1 - START
4 - ERRS

5. Definition of Terms

BAR - Bureau of Air and Radiation
CERCLA - Comprehensive Environmental Response and Liability Act
CFR - Code of Federal Regulations
EPA - U.S. Environmental Protection Agency
ERRS - Emergency and Rapid Response Services
KDHE - Kansas Department of Health and Environment
pCi/g - picocuries per gram
RCRA - Resource Conservation and Recovery Act
RSE - Removal Site Evaluation
RSK - Risk-based Standards for Kansas
START - Superfund Technical Assistance and Response Team
UFA - Unified Focus Assessment
UMTRCA - Uranium Mill Tailings Radiation Control Act

6. Additional sources of information

6.1 Internet location of additional information/report

For additional information, please refer to www.epaosc.org/standardprecision.

6.2 Reporting Schedule

POLREPs will be written and posted periodically (as developments warrant).

7. Situational Reference Materials

February 12, 1998, memorandum from Stephen Luftig, the Director of the Office of Superfund Remediation Technology Innovation (February 12, 1998, Directive number 9200.4-25)

Section 275 of the Atomic Energy Act, 42 U.S.C. § 2022, as amended by section 206 of the UMTRCA of 1978, 42 U.S.C. § 7918, and regulations at 40 CFR § 192.12

Region 9 Regional Screening Level tables found at http://www.epa.gov/region9/superfund/prg/

KDHE RSK Manual, Version 5, 2010